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Colorado's Industrial Roundwood Production and Mill Residues, 1982

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RESEARCH SUMMARY

Colorado's industrial roundwood production in 1982 was 21.3 million cubic feet, down 13.2 million cubic feet from the 1974 estimate. Saw log production was 20.3 million cubic feet. No round pulpwood production nor veneer log production was reported in 1982. The estimated volume of mill residues was 12.4 million cubic feet. The volume of residues used was 4.5 million cubic feet.

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In this report, industrial roundwood refers to all roundwood products except fuel wood, and includes logs, bolts, or other round sections cut from trees for industrial or consumer use and delivered to the mill, plant, or yard "in the round" (as logs or bolts). Such products include saw logs, house logs, veneer logs or bolts, pulp wood, piling, poles, posts, hewn ties, mine timbers, and excelsior bolts. The word "production" is herein synonymous with "harvest."

In 1982 Colorado's production of industrial roundwood was 21.3 million cubic feet, about 45 percent of Colorado's 1974 harvest and the lowest since the Forest Survey Research Work Unit at Intermountain Research Station began making periodic estimates of annual harvest (fig. 1). This indicates that the wood products industry in Colorado in 1982 was in a recession.

Saw log production made up the bulk of the harvest with 20.3 million cubic feet (table 1), down almost 20

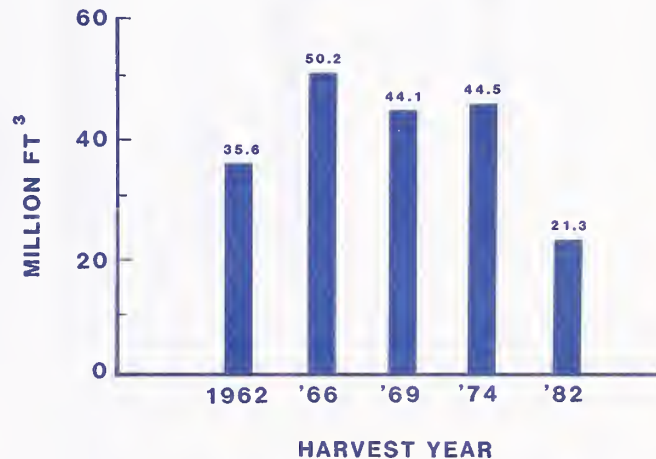


Figure 1.—Colorado's industrial roundwood harvest by selected years (Setzer and Shupe 1977; Setzer 1971; Spencer and Farrenkopf 1964).

Table 1.—Industrial roundwood products¹ harvest in Colorado by owner and product category, 1982

Owner	Saw logs	Other products	Total industrial
----- Thousand cubic feet -----			
National Forest	16,320	533	16,853
Other public ²	1,107	52	1,159
Private	2,852	405	3,257
Total ³	20,279	990	21,269

¹Round sections cut from trees for industrial or consumer use but excludes fuel wood. Industrial roundwood products in Colorado include saw logs, house logs, utility poles, posts, building poles, mine timbers, and excelsior bolts.

²Lands managed by public agencies other than the USDA Forest Service. Includes lands managed by the State of Colorado, the Bureau of Land Management, other Federal agencies, and counties and municipalities.

³Data may not add to totals due to truncating or rounding.

million cubic feet from 1974 (fig. 2). Of this, almost 56 percent was processed by mills with annual production capacities of less than 10 million board feet. There was no veneer log or pulp wood production reported for 1982. House logs, utility poles, posts and poles, mine timbers, and excelsior bolts comprised the other industrial roundwood products and totaled just under 1 million cubic feet (table 2). In 1974 the harvest of other products was 4.3 million cubic feet.

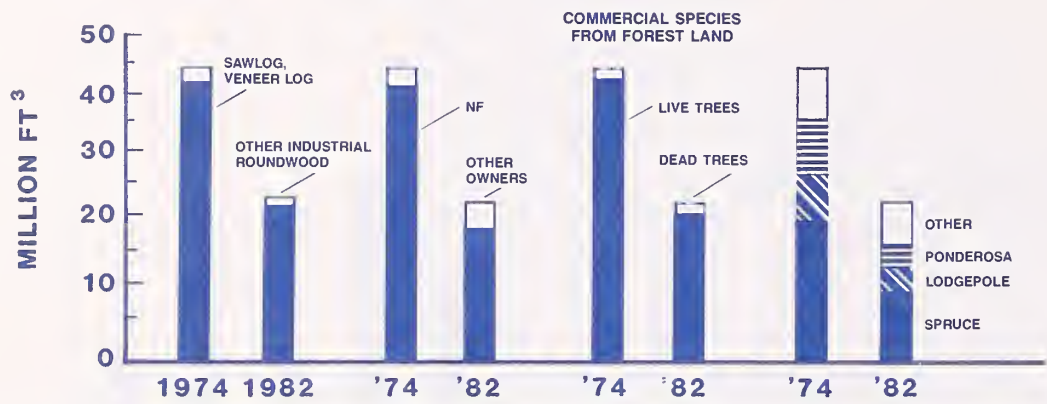


Figure 2.—A comparison of the composition of industrial roundwood production, 1974 and 1982 (Setzer and Shupe 1977).

Table 2.--Volume of industrial roundwood products from Colorado by species and product category, 1982

Species	Saw logs	Other products	Total ¹ industrial
----- Thousand cubic feet -----			
True firs	798	84	882
Juniper	--	--	--
Spruce	8,123	328	8,451
Pinyon pine	--	--	--
Lodgepole pine	2,993	430	3,423
Ponderosa pine	4,567	29	4,596
Douglas-fir	1,320	11	1,331
Cottonwood	101	50	151
Aspen	2,366	54	2,420
Other hardwoods	(1) ²	(1)	(1)
Other softwoods	10	(1)	10
Total ²	20,279	990	21,269

¹Data may not add to totals due to truncating or rounding.

²(1) = small amount.

Spruces, both Engelmann (*Picea englemannii*) and blue (*Picea pungens*), accounted for just under 40 percent of production. Ponderosa pine (*Pinus ponderosa*), lodgepole pine (*Pinus contorta*), aspen (*Populus tremuloides*), and Douglas-fir (*Pseudotsuga menziesii*) were the other major species (fig. 3).

Jackson and Montezuma Counties led all others with volumes of 3.4 million and 3 million cubic feet, respectively (table 3). Lodgepole pine was the leading species in Jackson County and aspen was the leader in Montezuma County. The only other counties to produce

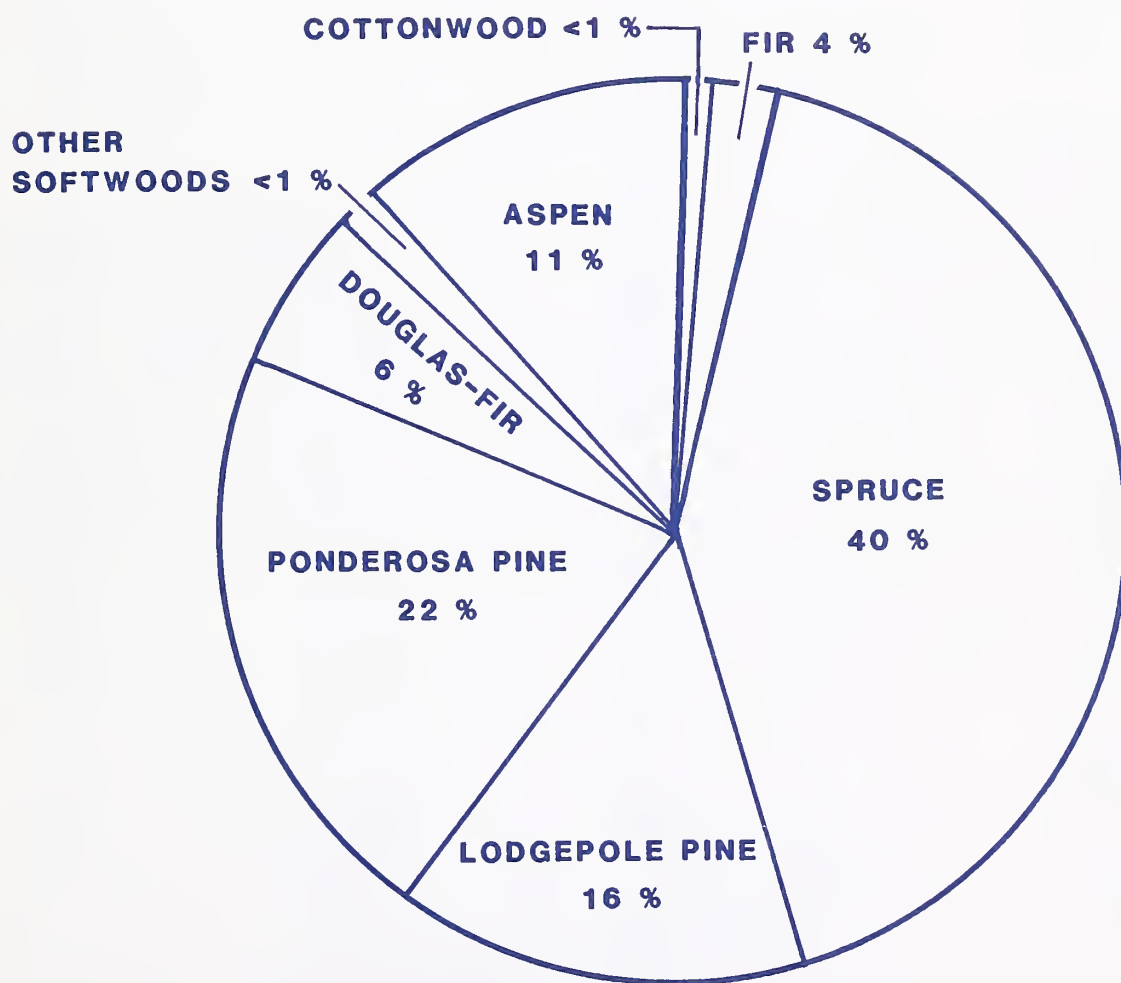


Figure 3.—Industrial roundwood products harvested in Colorado by species, 1982.

Table 3.--Volume of industrial roundwood products from Colorado by county and product category, 1982

County	Industrial roundwood products		Total ¹ industrial
	Saw logs	Other products	
	- - - - - Thousand cubic feet - - - - -		
Alamosa	162	--	162
Archuleta	61	--	61
Boulder	103	19	122
Chaffee	51	--	51
Clear Creek	100	--	100
Conejos	234	12	246
Custer	510	--	510
Delta	188	10	198
Dolores	1,575	--	1,575
Douglas	323	--	323
Eagle	302	--	302
El Paso	93	--	93
Fremont	222	3	225
Garfield	20	80	100
Grand	97	134	231
Gunnison	321	153	474
Huerfano	363	--	363
Jackson	3,232	124	3,356
Jefferson	380	--	380
La Plata	256	--	256
Larimer	504	22	526
Las Animas	323	--	323
Mesa	356	--	356
Mineral	1,115	202	1,317
Montezuma	3,026	--	3,026
Montrose	1,561	--	1,561
Ouray	518	--	518
Park	496	162	658
Rio Blanco	--	2	2
Rio Grande	1,872	--	1,872
Routt	394	4	398
Saguache	919	49	968
San Miguel	421	8	429
Summit	36	2	38
Teller	144	--	144
Total ¹	20,279	990	21,269

¹Data may not add to totals due to truncating or rounding.

COLORADO

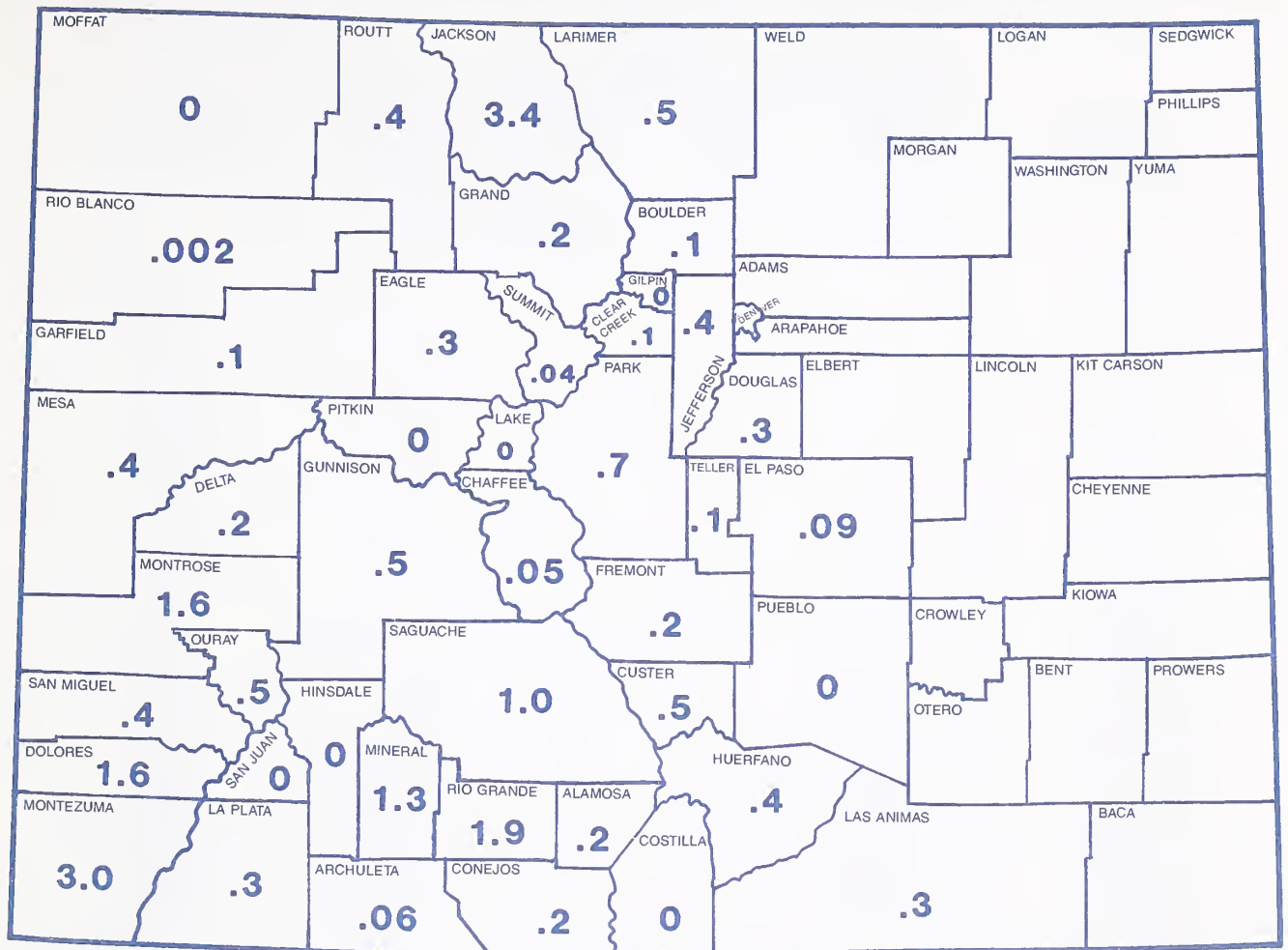


Figure 4.—Industrial roundwood production by county in millions of cubic feet, 1982.

over a million cubic feet were Rio Grande, Dolores, Montrose, and Mineral (fig. 4). Saguache County produced just under a million. La Plata County, which held the lead in industrial roundwood production in the 1969 and 1974 estimates (Setzer and Shupe 1972), produced a mere 256,000 cubic feet in 1982. Tables 4 through 9 contain other volume information by county and owner, and by county and species.

Most of the 1982 industrial roundwood product volume came from National Forest lands (79 percent) (table 1). The majority of the remaining harvest was from private and State lands. In 1974, 90 percent of the harvest came from National Forests. Ninety-two percent of the 1982 production was from standing live trees, with only 1.6 million cubic feet from dead trees.

Table 4.--Volume of industrial roundwood products from Colorado by county and owner, 1982, in cubic feet

County	Owner				Total ¹ industrial
	National Forest	State	Other Federal	Private	
	----- Thousand cubic feet -----				
Alamosa	--	--	--	161	161
Archuleta	61	--	--	--	61
Boulder	105	6	--	10	121
Chaffee	51	--	--	--	51
Clear Creek	--	--	--	101	101
Conejos	226	20	--	--	246
Custer	299	20	20	171	510
Delta	171	--	--	28	199
Dolores	1,573	--	--	--	1,573
Douglas	202	--	--	121	323
Eagle	303	--	--	--	303
El Paso	--	14	--	81	95
Fremont	94	4	--	128	226
Garfield	101	--	--	--	101
Grand	153	9	43	27	232
Gunnison	390	--	--	85	475
Huerfano	180	2	--	182	364
Jackson	2,971	156	13	216	3,356
Jefferson	218	61	--	101	380
La Plata	212	--	--	44	256
Larimer	462	--	--	64	526
Las Animas	--	--	--	323	323
Mesa	259	--	12	85	356
Mineral	1,318	--	--	--	1,318
Montezuma	2,237	718	--	71	3,026
Montrose	1,272	--	--	289	1,561
Ouray	94	--	--	424	518
Park	495	--	--	161	656
Rio Blanco	--	--	--	2	2
Rio Grande	1,630	--	--	241	1,871
Routt	384	--	--	14	398
Saguache	863	--	61	44	968
San Miguel	430	--	--	--	430
Summit	8	--	--	30	38
Teller	91	--	--	53	144
Total	16,853	1,010	149	3,257	21,269

¹Data may not add to totals due to truncating or rounding.

Table 5.--Volume of industrial roundwood products from Colorado by county and owner, Colorado, 1982, in Scribner board feet

County	Owner				Total ¹ industrial
	National Forest	State	Other Federal	Private	
- - - - - <u>Thousand board feet, Scribner</u> - - - - -					
Alamosa	--	--	--	800	800
Archuleta	300	--	--	--	300
Boulder	433	30	--	50	513
Chaffee	252	--	--	--	252
Clear Creek	--	--	--	500	500
Conejos	1,120	100	--	--	1,220
Custer	1,480	100	100	845	2,525
Delta	850	--	--	83	933
Dolores	7,800	--	--	--	7,800
Douglas	1,000	--	--	600	1,600
Eagle	1,500	--	--	--	1,500
El Paso	--	70	--	400	470
Fremont	444	20	--	636	1,100
Garfield	500	--	--	--	500
Grand	552	13	13	37	615
Gunnison	1,924	--	--	412	2,336
Huerfano	890	10	--	900	1,800
Jackson	14,716	774	62	721	16,273
Jefferson	1,080	300	--	500	1,880
La Plata	1,050	--	--	220	1,270
Larimer	2,200	--	--	296	2,496
Las Animas	--	--	--	1,600	1,600
Mesa	1,282	--	60	422	1,764
Mineral	6,530	--	--	--	6,530
Montezuma	11,090	3,560	--	350	15,000
Montrose	6,303	--	--	1,433	7,736
Ouray	465	--	--	2,100	2,565
Park	2,455	--	--	--	2,455
Rio Blanco	--	--	--	10	10
Rio Grande	8,083	--	--	1,194	9,277
Routt	1,905	--	--	70	1,975
Saguache	4,281	--	300	220	4,801
San Miguel	2,131	--	--	--	2,131
Summit	40	--	--	150	190
Teller	450	--	--	265	715
Total	83,106	4,977	535	14,814	103,448

¹Data may not add to totals due to truncating or rounding.

Table 6.--Volume of industrial roundwood products from Colorado by county and owner, Colorado, 1982, in board feet, International $\frac{1}{4}$ -inch rule

County	Owner				Total ¹ industrial
	National Forest	State	Other Federal	Private	
- - <u>Thousand board feet, International ¼-inch rule</u> - -					
Alamosa	--	--	--	956	956
Archuleta	358	--	--	--	358
Boulder	517	36	--	60	613
Chaffee	301	--	--	--	301
Clear Creek	--	--	--	597	597
Conejos	1,338	119	--	--	1,457
Custer	1,768	119	119	1,009	3,015
Delta	1,016	--	--	99	1,115
Dolores	9,319	--	--	--	9,319
Douglas	1,195	--	--	717	1,912
Eagle	1,792	--	--	--	1,792
El Paso	--	84	--	478	562
Fremont	530	24	--	760	1,314
Garfield	597	--	--	--	597
Grand	658	15	15	43	731
Gunnison	2,299	--	--	492	2,791
Huerfano	1,063	12	--	1,075	2,150
Jackson	17,583	925	74	861	19,443
Jefferson	1,290	358	--	597	2,245
La Plata	1,255	--	--	263	1,518
Larimer	2,629	--	--	354	2,983
Las Animas	--	--	--	1,912	1,912
Mesa	1,532	--	72	504	2,108
Mineral	7,802	--	--	--	7,802
Montezuma	13,250	4,253	--	418	17,921
Montrose	7,530	--	--	1,712	9,242
Ouray	556	--	--	2,509	3,065
Park	2,933	--	--	--	2,933
Rio Blanco	--	--	--	12	12
Rio Grande	9,657	--	--	1,427	11,084
Routt	2,276	--	--	84	2,360
Saguache	5,115	--	358	263	5,736
San Miguel	2,546	--	--	--	2,546
Summit	48	--	--	179	227
Teller	537	--	--	317	854
Total	99,290	5,945	638	17,698	123,579

¹Data may not add to totals due to truncating or rounding.

Table 7.--Volume of industrial roundwood products from Colorado by county and species, 1982, in cubic feet

County	Species									Total ¹
	True firs	Spruce	Lodgepole pine	Ponderosa pine	Douglas- fir	Cotton- wood	Aspen	Other hardwoods	Other softwoods	
	----- Thousand cubic feet -----									
Alamosa	81	81	--	--	--	--	--	--	--	162
Archuleta	--	56	--	5	--	--	--	--	--	61
Boulder	1	4	87	30	--	--	--	--	--	122
Chaffee	--	10	--	8	33	--	--	--	--	51
Clear Creek	--	--	--	50	50	--	--	--	--	100
Conejos	33	165	2	--	42	--	4	--	--	246
Custer	16	81	--	255	153	--	--	--	5	510
Delta	10	76	10	--	--	--	102	(1) ²	(1)	198
Dolores	--	593	48	426	--	--	508	--	--	1,575
Douglas	--	--	--	323	--	--	--	--	--	323
Eagle	16	143	143	--	--	--	--	--	--	302
El Paso	(1)	1	(1)	92	(1)	--	(1)	(1)	(1)	93
Fremont	--	114	--	90	21	--	--	--	(1)	225
Garfield	--	30	70	--	--	--	--	--	--	100
Grand	12	42	175	1	1	--	--	--	--	231
Gunnison	--	212	83	24	46	50	59	(1)	(1)	474
Huerfano	52	4	--	202	105	--	--	--	--	363
Jackson	150	1,118	2,086	2	--	--	--	--	--	3,356
Jefferson	5	19	29	186	141	--	--	--	--	380
La Plata	3	74	--	87	46	--	46	--	--	256
Larimer	7	27	183	229	80	--	--	--	--	526
Las Animas	13	14	--	269	27	--	--	--	--	323
Mesa	--	186	--	144	21	--	5	--	--	356
Mineral	149	1,015	10	24	99	--	20	--	--	1,317
Montezuma	--	868	29	811	--	--	1,313	--	5	3,026
Montrose	--	806	(1)	130	206	101	318	--	--	1,561
Ouray	--	68	--	440	8	--	2	--	--	518
Park	88	45	138	352	35	--	--	--	--	658
Rio Blanco	(1)	1	1	(1)	(1)	--	--	--	--	2
Rio Grande	166	1,562	11	--	111	--	22	--	--	1,872
Routt	12	268	112	--	--	--	6	--	--	398
Saguache	56	542	188	108	63	--	11	--	--	968
San Miguel	--	166	--	241	18	--	4	--	--	429
Summit	(1)	18	18	1	1	--	--	--	--	38
Teller	12	42	(1)	66	24	--	(1)	(1)	(1)	144
Total	882	8,451	3,423	4,596	1,331	151	2,420	(1)	10	21,269

¹Data may not add to totals due to truncating or rounding.

²(1) = small amount.

Table 8.--Volume of industrial roundwood products from Colorado by county and species, 1982, in board feet, Scribner

County	Species									Total ¹
	True firs	Spruce	Lodgepole pine	Ponderosa pine	Douglas- fir	Cotton- wood	Aspen	Other hardwoods	Other softwoods	
	----- Thousand board feet, Scribner -----									
Alamosa	400	400	--	--	--	--	--	--	--	800
Archuleta	--	276	--	24	--	--	--	--	--	300
Boulder	6	22	363	123	--	--	--	--	--	514
Chaffee	--	48	--	42	162	--	--	--	--	252
Clear Creek	--	--	--	250	250	--	--	--	--	500
Conejos	163	819	11	--	207	--	21	--	--	1,221
Custer	80	399	--	1,263	758	--	--	--	26	2,526
Delta	50	373	18	--	--	--	490	1	1	933
Dolores	--	2,940	238	2,105	--	--	2,518	--	--	7,801
Douglas	--	--	--	1,600	--	--	--	--	--	1,600
Eagle	80	710	710	--	--	--	--	--	--	1,500
El Paso	1	6	1	456	1	--	2	2	1	470
Fremont	--	565	--	438	97	--	--	--	--	1,100
Garfield	--	150	350	--	--	--	--	--	--	500
Grand	61	209	338	5	5	--	--	--	--	618
Gunnison	--	1,038	406	120	225	250	295	1	1	2,336
Huerfano	259	20	--	1,002	519	--	--	--	--	1,800
Jackson	742	5,546	9,982	3	--	--	--	--	--	16,273
Jefferson	26	93	142	923	697	--	--	--	--	1,881
La Plata	17	368	--	433	227	--	226	--	--	1,271
Larimer	36	134	823	1,109	395	--	--	--	--	2,497
Las Animas	66	68	--	1,334	132	--	--	--	--	1,600
Mesa	--	923	--	713	103	--	26	--	--	1,765
Mineral	740	5,030	49	120	493	--	99	--	--	6,531
Montezuma	--	4,305	143	4,021	--	--	6,507	--	25	15,001
Montrose	--	3,997	1	644	1,019	500	1,574	--	--	7,735
Ouray	--	335	--	2,184	37	--	9	--	--	2,565
Park	36	222	281	1,742	175	--	--	--	--	2,456
Rio Blanco	--	3	5	1	1	--	--	--	--	10
Rio Grande	822	7,742	55	--	548	--	110	--	--	9,277
Routt	60	1,329	555	--	--	--	32	--	--	1,976
Saguache	279	2,686	936	534	312	--	55	--	--	4,802
San Miguel	--	826	--	1,196	87	--	22	--	--	2,131
Summit	1	89	93	5	5	--	--	--	--	193
Teller	61	206	(1) ²	326	119	--	1	(1)	(1)	713
Total	3,986	41,877	15,500	22,716	6,574	750	11,987	4	54	103,448

¹Data may not add to totals due to truncating or rounding.

²(1) = small amount.

Table 9.--Volume of industrial roundwood products from Colorado by county and species, 1982, in board feet, International $\frac{1}{4}$ -inch rule

County	Species									Total ¹
	True firs	Spruce	Lodgepole pine	Ponderosa pine	Douglas- fir	Cotton- wood	Aspen	Other hardwoods	Other softwoods	
----- Thousand board feet, International ¼-inch rule -----										
Alamosa	478	478	--	--	--	--	--	--	--	956
Archuleta	--	330	--	29	--	--	--	--	--	359
Boulder	7	26	433	147	--	--	--	--	--	613
Chaffee	--	58	--	50	194	--	--	--	--	302
Clear Creek	--	--	--	299	299	--	--	--	--	598
Conejos	194	978	13	--	247	--	25	--	--	1,457
Custer	96	477	--	1,508	905	--	--	--	31	3,017
Delta	60	446	22	--	--	--	585	1	1	1,115
Dolores	--	3,513	284	2,515	--	--	3,008	--	--	9,320
Douglas	--	--	--	1,912	--	--	--	--	--	1,912
Eagle	96	848	848	--	--	--	--	--	--	1,792
El Paso	2	8	1	545	2	--	3	2	1	564
Fremont	--	675	--	523	116	--	--	--	--	1,314
Garfield	--	179	419	--	--	--	--	--	--	598
Grand	74	248	400	5	5	--	--	--	--	732
Gunnison	--	1,242	485	143	268	299	352	1	1	2,791
Huerfano	309	24	--	1,197	620	--	--	--	--	2,150
Jackson	886	6,626	11,926	4	--	--	--	--	--	19,442
Jefferson	31	111	169	1,102	832	--	--	--	--	2,245
La Plata	20	440	--	517	271	--	270	--	--	1,518
Larimer	42	160	984	1,325	471	--	--	--	--	2,982
Las Animas	79	81	--	1,594	158	--	--	--	--	1,912
Mesa	--	1,103	--	852	123	--	31	--	--	2,109
Mineral	884	6,009	59	144	589	--	118	--	--	7,803
Montezuma	--	5,144	170	4,805	--	--	7,773	--	30	17,922
Montrose	--	4,776	1	769	1,218	597	1,881	--	--	9,242
Ouray	--	400	--	2,609	44	--	11	--	--	3,064
Park	42	264	335	2,081	209	--	--	--	--	2,931
Río Blanco	--	4	5	1	1	--	--	--	--	11
Rio Grande	984	9,249	66	--	655	--	131	--	--	11,085
Routt	72	1,587	663	--	--	--	38	--	--	2,360
Saguache	334	3,209	1,118	638	373	--	65	--	--	5,737
San Miguel	--	987	--	1,429	104	--	26	--	--	2,546
Summit	2	105	111	5	5	--	--	--	--	228
Teller	73	246	(1) ²	389	143	--	1	(1)	(1)	852
Total	4,765	50,031	18,512	27,137	7,852	896	14,318	4	64	123,579

¹Data may not add to totals due to truncating or rounding.

²(1) = small amount.

In line with the drop in the volume of timber harvested, mill residue volumes declined in 1982 compared to 1974 (table 10). The proportion of coarse mill residues used declined from 77 to 47 percent (fig. 5), a contrast to the observed trend of increasing utilization. About half was used by the pulp and board industries and most of the remainder was used for fuel wood.

Table 10.--A comparison of estimated volumes of used and unused residues from mills in Colorado, 1974 and 1982

Year	Residues	Total	Unused	Used
- - - - - Thousand cubic feet - - - - -				
1974	Bark	5,345	2,853	1,492 (28%)
1982		2,116	1,656	460 (22%)
1974	Coarse ¹	9,003	2,070	6,933 (77%)
1982		5,704	3,036	2,668 (47%)
1974	Fine ²	8,401	4,285	4,116 (49%)
1982		4,600	3,220	1,380 (30%)

¹Material suitable for chipping, such as slabs, edgings, and trimmings.

²Sawdust and planer shavings.

The following conversion factors were used in preparing the volume figures for this report:

Product	Cubic feet	Board feet, Scribner	Board feet, International 1/4	Cords
Saw logs, house logs, excelsior, and mine timbers ¹	1	4.95758	5.92320	—
Utility poles ²	1	3.33690	3.89305	—
Posts and poles ³	1	0	0	—
Fuel wood ⁴	80	—	—	1
Mill residues ⁵				
1 bone dry unit =	92	—	—	1.08

¹From logging residues data collected in Colorado in 1983.

²From mill canvass data, converted to cubic feet and board feet based on reported dimensions.

³From mill canvass data, converted to cubic feet based on reported dimensions.

⁴From estimate supplied by USDA Forest Service. Volume data supplied in numbers of cords.

⁵From Bureau of Business and Economic Research, University of Montana, Missoula.

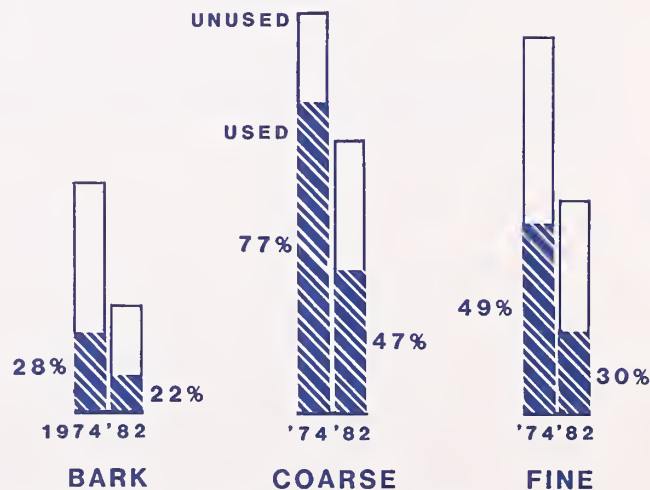


Figure 5.—A comparison of used and unused residues from mills in Colorado, 1974 and 1982, in percent.

The data for this report were obtained by canvassing primary wood-processing plants in 1983. These plants, mills, and yards were identified from the 1981 directory of Colorado sawmills and other primary wood processors prepared by the Colorado State Forest Service. The directory was reviewed and updated in the spring of 1983 by the Colorado Timber Industry Association.

Primary wood processing plants operating in 1982:		
Sawmills		84
House log plants		5
Excelsior plants		1
Utility pole treating plants		1
Post and pole yards		3
Shake mills		1

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During 1983 a canvass of primary wood-processing plants in Colorado was conducted to estimate and describe (1) roundwood harvested in Colorado in 1982 and delivered to wood-processing plants and (2) the use of residues by Colorado mills.

KEYWORDS: primary wood products, sawtimber, industrial roundwood, mill residues

The Intermountain Station, headquartered in Ogden, Utah, is one of eight regional experiment stations charged with providing scientific knowledge to help resource managers meet human needs and protect forest and range ecosystems.

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